

In the Specification:

At page 1, immediately after the title please insert the following paragraph:

--CROSS-REFERENCE TO RELATED APPLICATIONS

This application is the U.S. National Stage filing of International Application Serial No. PCT/GB2003/002934 filed July 8, 2003, which claims priority to GB 0215848.3 filed July 9, 2002 and to GB 0226264.0 filed November 11, 2002, each of which is incorporated herein by reference in its entirety.--

At page 1, immediately prior to line 3, please insert the heading:

--FIELD OF THE INVENTION--.

At page 1, immediately prior to line 7, please insert the heading:

--BACKGROUND OF THE INVENTION--.

At page 2, immediately prior to line 5, please insert the heading:

--SUMMARY OF THE INVENTION--.

At page 2, at line 11, please insert the following:

--BRIEF DESCRIPTION OF THE DRAWINGS--

The invention will now be further described by way of reference to the following Figures which are provided for the purposes of illustration only and are not to be construed as being limiting on the invention. Reference is made to a number of Figures in which:

FIGURE 1(a) shows the passive motion platform in its top elevation where it is sited atop an X-ray table.

FIGURE 1(b) shows the passive motion in its side elevation as would be viewed from the X-ray console with a patient undergoing the imaging of vertebral joint motion in the lower spine in the sagittal plane. (Turning the patient to the supine position would allow side-bending, or coronal plane, motion.)

FIGURE 2(a) shows the three linked components of the system, being the passive motion platform, the X-ray machine or other imaging device and the computer acquisition and analysis system FIGURE 2b shows an X-ray image of a vertebra with implanted metal screws and rods and with the outline of a template which denotes the areas of bony image enclosed within the template for automatic tracking.

FIGURE 3(a) shows a line graph in which is shown the results of tracking the angular motion of one intervertebral linkage (2 consecutive vertebrae) through a full side-bending range. The x-axis denotes the number of increments of motion between images registered by the tracking system. The y-axis denotes the magnitude of the angles between the one pair of vertebrae in side-bending (coronal plane motion) with, by convention, left side-bending being the positive direction and right side-bending the negative.

FIGURE 3(b) shows an example of automated tracking results for an average of ten registrations of a series of mobile intervertebral joints through a full side-bending range for 4 vertebrae simultaneously (vertebrae L2 to L3, L3 to L4, and L4 to L5).

FIGURE 4 shows the normal intervertebral angles of vertebrae L4/L5 during passive side-bending motion. The error bars express a 95% confidence interval.

FIGURE 5 shows successfully fused vertebrae L4/L5 during side bending motion.

FIGURE 6 shows abnormal movement during side-bending in a bone model of vertebrae that have been surgically stabilised. This is indicative of a pseudoarthrosis.

FIGURE 7 shows the results from Figures 4, 5 and 6 combined which demonstrates the ability of the methods and devices of the present invention to track vertebrae and to calculate intervertebral angles leading to accurate clinical diagnoses.--

At page 2, immediately prior to line 12, please insert the heading:

--DETAILED DESCRIPTION OF EMBODIMENTS--.

Please amend the paragraph beginning at page 10, line 26 of the specification as follows:

--According to a third aspect of the invention there is provided a method for the diagnosis of a pseudoarthrosis in a subject, the method comprising analysing the relative motion of skeletal structures in the patient according to a method ~~of any one of claims 5 to 7~~ described above.--

Please amend the paragraph beginning at page 12, line 19 of the specification as follows:

--The invention will now be further described by way of reference to the following Examples ~~and Figures~~ which are provided for the purposes of illustration only and are not to be construed as being limiting on the invention. ~~Reference is made to a number of Figures in which:--~~

Please delete the paragraph beginning at page 12, line 24 of the specification.

Please delete the paragraph beginning at page 12, line 27 of the specification.

Please delete the paragraph beginning at page 13, line 1 of the specification.

Please delete the paragraph beginning at page 13, line 5 of the specification.

Please delete the paragraph beginning at page 13, line 9 of the specification.

Please delete the paragraph beginning at page 13, line 17 of the specification.

Please delete the paragraph beginning at page 13, line 22 of the specification.

Please delete the paragraph beginning at page 13, line 26 of the specification.

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Please delete the paragraph beginning at page 13, line 29 of the specification.

Please delete the paragraph beginning at page 14, line 1 of the specification.